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A Minor Pitfall in the Telnet Protocol

Designers of Telnet options should be aware of the following possible case in the Telnet protocol which may generate unexpected behavior on either end of the connection. Although at present none of the existing options are susceptible to this problem, it could arise in the future.

The Telnet synch sequence casues all data to be deleted from the data stream until a Data Mark is encountered. Telnet control functions are not affected by the synch sequence (see page 9 of the protocol specification). A Telnet option subnegotiation could be defined such that it had an affect on the data following it in the data stream. For example, a subnegotiation might be used to indicate the terminal was to display the following data in a particular font or should receive other special treatment by the terminal. A Telnet synch sequence sent after such a subnegotiation and its data and before the subnegotiation had been processed could result in the subnegotiation having its affect on data other than that intended.

Two possible solutions come to mind at once. First, the data to be affected could be included as a parameter of the subnegotiation. In other words, the data is inserted in the data stream before the IAC SE that terminates the subnegotiation. The disadvantages of this solution are both theoretical and practical. Theoretically, it is improper and not really in the spirit of the Telnet protocol design to send data as subnegotiation parameters. Practically, in a situation where this case would arise it would be equally unexpected behavior (and perhaps confusing if a human was affected) if all data except that affected by the subnegotiation was flushed.

The second solution would be for designers of options which have such subnegotiations define a subnegotiation or other mechanism that would follow immediately after the Data Mark and nullify the affects of any offending subnegotiation. The exact semantics of such a subnegotiation would probably be very specific to the option.